

Chapter Two

Acceptance, Transportation, and Integration Project

Introduction

Reduced funding and cuts in personnel led us to defer further transportation planning and planning for acquisition of waste acceptance and transportation services. It also led to a reorganization of our Program, described in Chapter Three, that included the transfer of program integration functions to a new Office of Acceptance, Transportation, and Integration. Included in the transfer were the increasingly important functions of interacting and coordinating with generators of DOE-managed nuclear materials that are being integrated into the waste management system—with impacts that cut across our Program.

Litigation over waste acceptance issues continued throughout the fiscal year.

Waste Acceptance: DOE-Managed Nuclear Materials

Integrating DOE-managed nuclear materials into our Program

Four offices within DOE manage materials destined for geologic disposal. Two are within the Environmental Management Program: the Office of Waste Management, responsible for high-level radioactive waste, and the Office of Nuclear Materials and Facility Stabilization, responsible for DOE spent nuclear

fuel. The other offices are the Office of Fissile Materials Disposition, responsible for surplus weapons-usable plutonium, and the Office of Nuclear Energy's Naval Nuclear Propulsion Program, a joint program of the Department of Energy and the Department of the Navy that is responsible for naval spent nuclear fuel. In addition, the Office of Nuclear Energy manages the Department's sodium-bonded spent nuclear fuel. As required by the National Environmental Policy Act, the Department is preparing an environmental impact statement on its plans to dispose of this spent nuclear fuel in the repository.

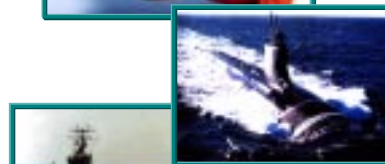
Defense Complex Cleanup



Stewardship of Weapons Materials



Disposal of DOE and Foreign Research Reactor Spent Fuel



Disposal of Naval Reactor Spent Nuclear Fuel

DOE-managed nuclear materials

A notable achievement in Fiscal Year 1998 was execution of memoranda of agreement with the Office of Environmental Management and the Office of Nuclear Energy's Naval Nuclear Propulsion Program. The memoranda are posted on OCRWM's Web site. Developed through years of close coordination, they detail each party's responsibilities for safe and timely disposal of nuclear materials. An important requirement is that the Department pay its fair share of the costs of disposal and that its outstanding obligations be met as a condition of OCRWM's acceptance of DOE-managed nuclear materials. Other provisions require development of a schedule for payment of fees to OCRWM equivalent to those paid by utilities. Equitable sharing of direct costs, common variable costs, and unassignable costs is to be achieved through the methodology published in the *Federal Register* Notice described in Chapter Four. The parties are to coordinate in developing annual budget justifications and presentations for congressional hearings. The desired results are sound integration of planning and consistency in communication.

The memoranda address waste acceptance, transportation, and disposal issues, and they require identification of data needs and definition of interface descriptions. They also establish a process for determining waste acceptance schedules similar to those OCRWM has developed for utilities under the *Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste*, 10 CFR Part 961. The schedules will define what wastes will be picked up, where, and when. The memoranda provide for the development of waste acceptance criteria and compliance procedures needed to support the repository license application to the NRC, as well as the development of transportation systems that will meet applicable NRC and Department of Transportation requirements for shipping. The memoranda require cooperation to ensure that all waste acceptance activities are performed safely, securely, and cost-effectively.

Pursuant to the memoranda, we obtained data from these offices for use in defining the waste acceptance criteria and disposal interface requirements for DOE-managed materials that may be received at a repository. The goal of the requirements will be to improve overall repository system performance. When the criteria are final, in Fiscal Year 1999, they will be incorporated into the Waste Acceptance System Requirements Document. The fee payment schedule required by the memoranda will be drafted in Fiscal Year 1999.

Work began with the Office of Fissile Materials Disposition to determine the appropriate mechanism for managing the institutional interface for plutonium waste forms, and we continued to coordinate informally to ensure that all necessary technical interfaces are identified.

Monitoring DOE's Nuclear Materials Initiative

In Fiscal Year 1998, OCRWM participated with the Nuclear Materials Integration Program of the Office of Environmental Management in planning for disposition of DOE's excess nuclear materials. Findings and conclusions will be published in a *Master Material Management Plan* and in individual materials management plans in Fiscal Year 1999.

Twenty-five thousand radioactive items that are excess to national needs and may be disposed of in a geologic repository have been identified. Sealed sources comprise 24,400 of those items. Most of the radioactivity is from strontium-90 and cesium-137 sources at Hanford, Washington, and Oak Ridge, Tennessee. The Nuclear Materials Integration Program has identified geologic disposal as the disposition path for many materials. While the Department has not formally determined specific paths for any of these nuclear materials, we are monitoring the effort to remain informed about materials that may be considered for geologic disposal.

Waste Acceptance: Commercial Spent Nuclear Fuel

Litigation over waste acceptance

The Nuclear Waste Policy Act of 1982 authorized the Secretary to enter into contracts with the owners and generators of commercial spent nuclear fuel. Our interactions with them on matters concerning receipt, shipment, and disposal of their spent nuclear fuel are governed by the *Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste*, 10 CFR Part 961, promulgated as a Federal rule in 1983. The Department's obligation under the Standard Contract to begin waste acceptance has been the subject of litigation. Appendix A contains a discussion of this litigation and its current status.



Dry cask storage of commercial spent nuclear fuel

Deferral of planning for acquisition of waste acceptance and transportation services

In Fiscal Year 1996, we initiated a competitive procurement strategy for acquiring waste acceptance and transportation services, and we consulted closely with industry and other interested parties to refine it. This strategy was

designed to stimulate the market to provide services for transportation of commercial spent nuclear fuel. The strategy relies on private industry to provide a cost-effective approach, with Federal involvement focused on oversight and coordination with affected States and Tribes. Essentially, contractors would pick up spent nuclear fuel at the sites where it is stored and deliver it to a Federal facility, while providing all equipment and services needed to perform those functions. The competitive acquisition would include a combination of fixed-price, fixed-rate, multi-year, performance-based, 10- to 15-year contracts, with the initial contract cycle leading to awards of up to four regional service contractors.

A revised draft Request for Proposals (RFP) was issued in December 1997; the comment period was later extended until April 1998. In September 1998, the draft RFP was revised again, and a Notice of Availability was published in the *Federal Register*. The text of the RFP was posted on the OCRWM Web site for information. We made a number of revisions to this draft and added an appendix that provides additional guidance to potential bidders on the kinds of specific operational protocols that will be imposed.

Work on the RFP was subsequently deferred until the shipping destination is determined and transportation operations become a near-term objective. When a repository siting decision, currently scheduled for 2001, is made, we may issue another draft RFP and/or seek additional comments on the current draft.

Technical waste acceptance issues

OCRWM continues to support the concept of multi-purpose canister designs and encourages the use of canisters for at-reactor storage. Such canisters could later be used by the Federal waste management system for transportation, storage, and disposal within waste packages designed for

**January 30, 1998, Statement by
Lake Barrett, Acting Director
Office of Civilian Radioactive Waste Management
on the DOE Obligation to Accept Waste on January 31, 1998**

“The Department is committed to fulfilling its obligation to dispose of the nation’s spent nuclear fuel and high-level waste as soon as possible — but not sooner than it takes to fully study and understand the science of a permanent waste disposal site. Our nation’s policy to support geologic disposal is essential not only for commercial spent fuel, but also for the cleanup of the nuclear weapons complex, our international nonproliferation policy, and our national defense mission.

Permanent disposal of civilian and defense-related radioactive waste is one of the most complex technical challenges facing the nation. We are aggressively addressing numerous issues to demonstrate that this waste can be disposed of in a manner that will protect the environment and public health and safety for thousands of years. But the magnitude and seriousness of this task cannot be underestimated.

The Department is maintaining momentum on the completion of the Yucca Mountain Viability Assessment to help determine whether that site will be suitable for a permanent repository. Following the Viability Assessment expected this fall, the Department’s efforts will turn to the preparation of the draft Environmental Impact Statement in 1999 and, if appropriate, the potential site recommendation in 2001. The scientific and engineering work at Yucca Mountain is thorough, aggressive and flexible. The work is performed in a way that is open and transparent to ensure full participation.

We understand the frustration of the utilities that the Department is not able to begin spent fuel acceptance this year. But, we believe it would be a mistake to divert our resources and efforts to a temporary ‘fix,’ which could undermine our focus on obtaining a permanent solution, and burden future generations.

When the Department of Energy entered into contracts with the utilities in 1983, both sides recognized the uncertainties of a complex program expected to last decades. As a result, the contracts contained provisions to address delays. We continue to believe that the contracts are the appropriate means to address the delay. Early last year, Secretary Peña met with nuclear utility executives to work out some accommodation to address our anticipated delay, including offers of compensation. Unfortunately, the utilities were for the most part disinterested and went back to court. Today, we remain willing to work with the contract holders to address any hardships associated with this delay, and, of course, will comply with any applicable court order. It is important to emphasize that the Department’s delay does not create a safety problem. While storing spent nuclear fuel may entail a cost and maintenance burden to some utilities that they would like to avoid, until a facility constructed under the Nuclear Waste Policy Act can be developed to accept spent nuclear fuel, utilities can continue to store spent nuclear fuel safely at their reactor sites. The Nuclear Regulatory Commission, in its most recent Waste Confidence Proceeding, affirmed this belief.”

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the repository. We remain committed to working with the private sector to ensure that multi-purpose canister concepts are considered in planning for commercial spent nuclear fuel storage and transportation systems.

In Fiscal Year 1998, we sent a letter to vendors and utilities informing them that we are developing performance-based requirements for acceptance of disposal canisters. Because the specifications are derived from design of the waste packages that will be emplaced in the repository and because waste package design is still evolving, specifications for a canister-based system may evolve, as well. When the requirements are completed, we will make them available to all interested parties.

Nuclear Regulatory Commission interactions

We interacted with the NRC's Spent Fuel Project Office on several subjects in Fiscal Year 1998.

Not-Site-Specific Storage Concept. In April 1996, we had begun work on design, engineering, and supporting safety analyses for a non-site-specific storage facility to be constructed in two phases. The first phase would be for receipt of canistered spent nuclear fuel only; the second, which would be developed in modules, would add the capability to receive and store uncanistered spent nuclear fuel. In Fiscal Year 1997, we had submitted a non-site-specific Topical Safety Analysis Report for Phase I of such a facility to the NRC for review. In Fiscal Year 1998, we supplied information that the NRC had requested on the report. On September 23, 1998, we submitted Revision 1 of the report for final review by the NRC.

Dry transfer system. This system would allow transfer of spent nuclear fuel between a storage container and a transportation container without use of a water pool. We manage design and interactions with the NRC and research and development funding for the task; actual

development of the technology was transferred to DOE's Idaho National Engineering and Environmental Laboratory at the end of Fiscal Year 1997. In July of 1998, the NRC asked us for more information on the Topical Report we had submitted in September 1996, and we are preparing a response to be submitted in Fiscal Year 1999. In September 1998, the laboratory conducted a partial cold demonstration of the prototype system's ability to handle hardware.

Actinide burn-up credit. In May 1995, we had submitted a Topical Report to the NRC on a methodology to allow credit in criticality calculations for the fact that as nuclear fuel is used to generate power in a reactor, its reactivity, and the risk of criticality, decline. NRC approval of this methodology would permit cask designers to factor burn-up credit into design of criticality control systems for casks used to transport spent nuclear fuel. This would permit design of a cask that can accommodate more spent nuclear fuel. With more efficient casks, fewer shipments would be needed to transport spent nuclear fuel.

In September 1998, we completed Revision 2 of the Topical Report and subsequently submitted it to the NRC for review. This concluded our involvement in the generic consideration of the application of burn-up credit to transportation cask design; the private sector can now address this issue in its specific designs for transportation casks.

Transportation

Deferral of policy development

Section 180(c) of the Nuclear Waste Policy Act provides for technical and financial assistance to States for training public safety officials of appropriate units of local government and Native American Tribes through whose jurisdictions DOE plans to transport spent nuclear fuel and high-level radioactive waste. Training will cover procedures required for safe routine transportation of these

materials, as well as procedures for responding to emergency situations.

We have been consulting with external parties for many years to develop appropriate policies and procedures to implement this section of the Act, and our approach to implementation has evolved. We intend to administer grants for activities specified under the policy and procedures we develop to implement the section. OCRWM will adopt, to the extent practicable, any future DOE-wide standardization of assistance to States and Tribes for DOE shipments of radioactive materials.

In April 1998, we published a Notice of Revised Proposed Policy and Procedures for Safe Routine Transportation and Emergency Response Training and Technical Assistance and Funding. It reflects comments on the prior draft. We will keep the Notice in draft form until a definitive shipment date can be established based on progress on determining a site to accept the waste. Because our current planning assumptions tie the start of waste shipments to the opening of a repository in 2010, and because the Yucca Mountain site's suitability for a repository has not yet been determined, we decided in Fiscal Year 1997 that it would be premature to publish a final Notice far in advance of the selection of actual transportation routes. We expect to know approximately 4 years prior to shipment through which State or Tribal lands the shipments will travel, even if specific routes have not been selected. Using this information, we will notify these jurisdictions about their potential eligibility for the Section 180(c) grants.

OCRWM involvement in transportation planning

Transportation of radioactive waste to Federal facilities will affect and involve more units of government and other organizations than any other component of the Program. Consequently, for many years we have interacted closely with many parties concerned with transportation planning.

The Transportation External Coordination Working Group, co-chaired by OCRWM and the Office of Environmental Management, is a key forum for transportation coordination. Members include personnel from various DOE programs; national and regional organizations representing State, Tribal, and local governments; professional associations; and industry organizations.

OCRWM staff participated in the two meetings this group held in Fiscal Year 1998: the thirteenth semiannual meeting, attended by over 150 people, was held in Las Vegas, Nevada, January 20-22; the fourteenth meeting, attended by 140 people, was held in Milwaukee, Wisconsin, July 13-15. Participants and observers represented State, Tribal, and local governments, regional groups, industry, professional organizations, and DOE. The agendas for the meetings spanned a broad range of issues related to DOE transportation of radioactive materials.

Program Integration

As part of our efforts to limit and manage the timing of program costs, we conducted a study in Fiscal Year 1998 to conceptualize and evaluate various options that could prove useful in reducing near-term annual costs and/or providing receipt of waste at repository facilities earlier than the currently scheduled date of 2010. The tradeoffs involved in implementing these scenarios, including increases in life cycle costs, increases in programmatic risk, and decreases in the amount of waste accepted through 2020, were calculated. Twenty-one implementation scenarios were postulated and nine representative scenarios were selected for thorough evaluation.

Work was begun to update the Total System Description Document, a top-level document that describes the waste management system as currently envisioned. The revised version will be issued in Fiscal Year 1999 and posted on the OCRWM Web site.